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USS Gary Works

Gary, Indiana

000108

PM_{10} NAAQS Attainment Demonstration for the USS Gary Works Facility

ENSR Consulting and Engineering

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1.0 INTRODUCTION

1.1 Overview

ENSR Consulting and Engineering has been retained by USS Gary Works to provide technical and regulatory support during the development of the Lake County PM_{10} State Implementation Plan (SIP) by the Indiana Department of Environmental Management (IDEM). A major focus of ENSR's efforts has been to review and develop technically sound PM_{10} control strategies for USS Gary Works that will lead to modeled attainment of both the short-term and long-term PM_{10} National Ambient Air Quality Standard (NAAQS) in the vicinity of the facility. ENSR's efforts regarding the Lake County PM_{10} SIP are consistent with the regulatory guidance developed by USEPA for PM_{10} SIP attainment demonstrations. The present document is a summary of the attainment demonstration results completed by ENSR for USS Gary Works. The report includes all of the valid technical approaches and the federal regulatory guidance utilized by ENSR to achieve attainment with both the short and long term NAAQS in the vicinity of Gary Works.

1.2 Lake County Nonattainment Designation

Lake County, IN has been designated as a moderate PM_{10} nonattainment area (56 FR 56756 November 6, 1991) pursuant to the Clean Air Act Amendments (CAAA) of 1990. All areas identified as "Group I" areas were designated as moderate nonattainment areas. Group I areas are defined by EPA as "areas with a strong likelihood of violating the PM_{10} NAAQS and requiring substantial SIP adjustments" (52 FR 29384 August 7, 1987). Group I areas were identified in the aforementioned Federal Register.

During the years preceding the August 7, 1987 Federal Register notice there were a number of measured exceedances of both the short-term and annual PM_{10} NAAQS. It is important to note that during the past three years (1989-1991) the only violations of the short-term (24-hour) PM_{10} NAAQS are at the Gary Armor Plate (Gate City Steel) monitoring site. It is our position that this monitor is incorrectly sited based on the NAMS/SLAMS monitor siting guidelines (40 CFR Part 58) and should not be used for purposes of area designation (see discussion in Appendix E). In addition, there have been no violations of the annual PM_{10} NAAQS within Lake County during the 1989-1991 time period.

The 1990 amendments contemplate two classifications for particulate nonattainment areas: moderate and serious. All areas were initially classified as moderate. EPA has subsequently reclassified 14 areas as serious based on a determination that the areas cannot practically attain

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the NAAQS by the moderate area attainment date (December 31, 1994). The serious area attainment date is December 31, 2001. Lake County was not redesignated by EPA as serious nonattainment. The EPA may grant a moderate PM_{10} nonattainment area two one-year extensions if (1) the state has complied with all statutory requirements, (2) no more than one exceedance of the 24-hour primary NAAQS has occurred in the area in the year preceding the extension year, and (3) the annual mean concentration in the area for the year preceding the extension year is less than or equal to the annual NAAQS. During 1991, there were a total of two exceedances of the 24-hour NAAQS in Lake County, both at the Gary Armor Plate monitor site. The maximum annual average for all monitors within Lake County during 1991 was 42 $\mu g/m^3$, while the annual mean concentration for all area monitors was 30 $\mu g/m^3$. Both of these annual concentrations are well below the annual PM_{10} NAAQS of 50 $\mu g/m^3$.

1.3 State Implementation Plan Requirements

All states must develop a SIP which provides for the attainment of the PM_{10} NAAQS by the prescribed attainment date. The specific PM_{10} SIP requirements for moderate nonattainment areas are set forth in section 189 of the Act. These requirements include: development of an NSR permit program, an attainment demonstration including an accurate, current emissions inventory and an air quality modeling analysis, and the installation and use of RACM/RACT for sources of PM_{10}. Specific guidance for moderate PM_{10} nonattainment areas is contained in the EPA memorandum *PM_{10} Moderate Area SIP Guidance: Final Staff Work Product*. A copy of this memorandum is included as an appendix to this report (Appendix A).

The 1990 CAAA requires that moderate PM_{10} nonattainment area SIP's include RACM and RACT for sources of PM_{10} emissions. Generally, EPA construes RACM and RACT to apply to those existing sources in the nonattainment area that are reasonable to control in light of the attainment needs of the area and the technical and economic feasibility of such controls. Congress, in both the earlier law and the 1990 CAAA, did not use the word "all" in conjunction with RACT. Thus, an existing source need not be subject to a control technology in light of the area's attainment needs if attainment can be demonstrated without the use of the control. Where the sources affected by a particular control measure contribute only negligibly to ambient concentrations that exceed the NAAQS, EPA's policy is that it would be unreasonable and therefore not constitute RACM to require controls on that source. This concept to exempt de minimis situations from regulation has been recognized by the courts in similar situations as "a tool to be used in implementing the legislative design" [see Alabama Power Co. v. Costle, 636 F.2d 323, 360 (D.C. Cir. 1979)].

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1.4 Report Overview

This report focuses on the attainment demonstration for the PM_{10} NAAQS in the vicinity of the Gary Works facility and presents the methodology, data bases, and additional control measures used in the attainment demonstration. The initial task in the development of the attainment demonstration included a review of IDEM's July 1991 attainment demonstration and subsequent draft SIP rules. Based on this review, ENSR has provided IDEM with comments concerning the following information related to the SIP attainment demonstration:

- Gary Works PM_{10} emission inventory,
- Modeling techniques for fugitive emissions from the Coke Plant, and BOP, Q-BOP, and casthouse roof monitors,
- Wind direction-specific PM_{10} background concentrations,
- Building dimensions for aerodynamic downwash,
- Corrections to stack heights, and
- Corrections to receptor locations and heights.

A complete list of references for the reports and correspondence documenting the above comments are included in references section of this report.

Two distinct scenarios for demonstrating attainment with the PM_{10} NAAQS are presented in this report. The two attainment scenarios are based on the installation and use of different control measures and to some extent alternative modeling techniques and data bases. The first scenario incorporates secondary controls at the Q-BOP shop in the attainment demonstration while the second scenario relies upon the use of natural gas at the No. 4 and Turboblower boilerhouses and increased stack heights at the Q-BOP shop hot metal desulfurization baghouses. Many of the dispersion modeling techniques utilized by IDEM were retained in the present modeling analyses. All alternative modeling techniques are consistent with the *Guideline on Air Quality Models (Revised)* (EPA 1987a) and recommendations in the *Industrial Source Complex (ISC) Dispersion Model User's Guide* (EPA 1987b). ENSR has not incorporated the alternative dispersion modeling approach (i.e., the Buoyant Line and Point Source model) for the coke oven fugitives and BOP and Q-BOP roof monitors in the present attainment demonstration.

Section 2 of this report presents the emissions inventory and control strategies used in the attainment demonstrations. Revised and updated emissions data are provided for the Coke Plant, Sinter Plant, Blast Furnaces, BOP and Q-BOP Shops, Boilers, and fugitive sources. The emission inventories include the proposed new controls for each scenario and the proposed maximum daily and annual operating and production limitations. The technical justification for ENSR's emission inventory is provided in Appendices B and C. Differences between the

ENSR/USS emission inventory and the IDEM emission inventory for the Gary Works facility are also noted in Section 2.

Section 3 presents corrections, additions, and modifications to dispersion model input data bases including wind direction specific building dimensions for the Gary Works points sources, corrections to stack heights, elimination of receptors on restricted plant property, corrections to receptor heights and a change in the methodology for calculation of ambient background from a more appropriate wind direction dependent ambient background data set.

The methodology and results of the dispersion model analyses are presented in Section 4. The results of the dispersion model analyses demonstrate attainment of both the short-term and annual average PM_{10} NAAQS for both scenarios. The conclusions of this study are presented in Section 5.

2.0 PM_{10} EMISSION INVENTORY

2.1 Overview

In preparation for the dispersion modeling analyses associated with the development of the Lake County PM_{10} SIP, a PM_{10} emission inventory was developed by ENSR for the USS Gary Works (ENSR 1990, ENSR 1991a). The main sources of data used by ENSR to develop the Gary Works PM_{10} emissions inventory were:

- IDEM emissions inventory (dated 12/6/89),
- LCTF emissions inventory (dated 4/6/90),
- AP-42,
- Lake County SO_2 SIP limitations,
- City of Gary Certificates to Operate,
- Air Permit Applications
- Control equipment vendor specifications,
- Stack test results,
- Production and fuel use information provided by USS,
- Iron and steel technical articles from USEPA documents.

The 1990 and 1991 emissions inventory concentrated on the identification of all sources of particulates and the development of accurate emission factors. The original emission data were based on maximum hourly production rates and therefore represent maximum potential to emit. Based on the results of initial dispersion modeling utilizing the original emission inventory, ENSR's efforts focused on the development of technically sound PM_{10} control strategies for USS Gary Works that will lead to modeled attainment of both the short-term and long-term PM_{10} NAAQS in the vicinity of the facility.

The control strategy and emission inventory documented in Section 2, Appendix B, and Appendix C of this report represent the culmination of an iterative process which included the identification of those sources which significantly contributed to the maximum predicted impacts, the development of reasonable control strategies for the identified sources, and the analysis of the impacts of the control strategies. It is important to note that sources below the minimum modeling threshold identified by IDEM (e.g., small gas-fired furnaces) are not included in the PM_{10} inventory.

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Two different control strategies which resulted in attainment of the PM_{10} NAAQS were identified as a result of this process. Scenario 1 incorporates secondary controls at the Q-BOP shop and production and operating restrictions at the sinter plant, BOP and Q-BOP shops and the blast furnaces. Scenario 2 relies upon the exclusive use of natural gas at the No. 4 and Turboblower boilerhouses, greatly increased stack heights at the Q-BOP shop hot metal desulfurization baghouses, and production and operating restrictions similar to Scenario 1.

The emissions inventory documented in this report represents the first scenario. As shown in Section 4, both control strategies result in attainment of the PM_{10} NAAQS. Predicted impacts for Scenario 1 are lower than Scenario 2. Although the capital cost of Scenario 1 is greater than Scenario 2, USS believes that the controls incorporated in Scenario 1 are reasonable in light of the current and future attainment needs of the area of Lake County surrounding the Gary Works facility.

The following sections briefly describe the inventories for each of the plant's major sections and present the maximum hourly and annual PM_{10} emission rates for all sources. Also shown in these tables are the emission rates used by IDEM in their July 1991 dispersion modeling, many of which are based on the assumption of control equipment installation. A more complete discussion of the emissions inventory can be found in ENSR's original inventory reports (ENSR 1990, ENSR 1991a). The emission factors, fuel usage data, production limitations and source operating capacities utilized to develop the emission rates presented in this section can be found in Appendices B and C of this report.

2.2 Coke Plant

Emissions of PM_{10} from the Coke Plant (see Table 2-1) are attributable to four sources: underfire stacks, coking fugitives, quench towers, and precarbon units. The total PM_{10} emission rate calculated by ENSR for the Coke Plant is 204.6 lbs/hr, compared with a rate of 215.3 lbs/hr calculated by IDEM. Both ENSR and IDEM assumed that the coke batteries operate at 100 percent of capacity and that the #15 and #16 batteries no longer operate. The ENSR inventory included credit for emission reductions associated with the Gary Works' battery leak detection program. Annual emission at the coke plant are based on full year operation.

2.3 Sinter Plant

Sources which contribute to the PM_{10} emissions from the Sinter Plant include windbox and cooler stacks, line baghouses, S1/S2 baghouses, and screening/storage baghouses (see Table 2-2). The emission rates for these sources are based on two of the three sinter lines operational at any given time. The total emission rate estimated by ENSR for the Sinter Plant

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TABLE 2-1

COKE PLANT PM_{10} EMISSION RATES

Source Number	Source Name	PM_{10} Emission Rate		
		ENSR (lb/hr)[1]	ENSR (tons/yr)[2]	IDEM (lb/hr)[3]
94001	#2 Precarbon Precipitator	7.5	32.8	7.5
94002	#2 Precarbon Coal Tower Baghouse	2.1	9.2	2.1
94003	#2 Precarbon Preheat Baghouse	2.2	9.6	2.2
94004	#3 Precarbon Precipitator	4.2	18.4	4.2
94005	#3 Precarbon Coal Tower Baghouse	6.4	28.0	6.4
94024	#2/#3 Quench Tower	39.1	171.3	32.3
94026	Coke Battery #2 Underfire Stack	27.5	120.5	26.7
94027	Coke Battery #3 Underfire Stack	42.1	184.4	40.4
94028	#5 Quench Tower	21.0	92.0	20.2
94029	#5 Coke Battery Underfire Stack	16.8	73.6	16.1
94030	#7 Coke Battery Underfire Stack	20.4	89.4	19.8
94101/94102	#2 Coke Battery Fugitives	5.6	24.5	13.7
94103/94104	#3 Coke Battery Fugitives	5.2	22.8	13.7
94105/94106	#5 Coke Battery Fugitives	2.4	10.5	5.0
94107/94108	#7 Coke Battery Fugitives	2.4	10.5	5.0

(1) An explanation of the calculation of these emission rates can be found in Appendix B.
(2) Based on 8,760 hours of operation.
(3) Emission rates used by IDEM in the July 1991 modeling analysis.

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TABLE 2-2

SINTER PLANT PM_{10} EMISSION RATES

Source Number	Source Name	PM_{10} Emission Rate		
		ENSR (lb/hr)[1]	ENSR (tons/yr)[2]	IDEM (lb/hr)[3]
94007	#3 Sinter Plant Coolers	152.8	218.5	152.8
94008	#3 Sinter Plant Discharge Baghouse	7.2	10.3	7.2
94011	#3 Sinter Windbox	165.0	235.9	197.2
94053	#3 Sinter Plant S1/S2 Baghouse	0.8	2.0	0.0[4]
94130	#3 Sinter Plant S1/S2 Baghouse Fugitives	4.4	11.0	0.0[4]

(1) An explanantion of the calculation of these emission rates can be found in Appendix B. Assumes two of three lines operating.
(2) Based on 4,992 hours of operation per year.
(3) Emission rates used in the IDEM modeling of July 1991.
(4) Source was omitted from the IDEM modeling of July 1991.

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is 330.2 lbs/hr, compared to the IDEM estimate of 357.2 lbs/hr. The ENSR emission rate includes contributions from the Sinter Plant S1/S2 Baghouse (5.3 lbs/hr), which was not included in the IDEM inventory. Annual emissions are based on maximum sinter production of 1,600,000 tons per year (tpy).

2.4 Blast Furnace Units

Emissions of PM_{10} from the Blast Furnace Units can be divided into five categories: blast furnace stoves, materials handling, sinter screening, casthouses, and the iron desulfurization unit (see Table 2-3). The total PM_{10} emission estimate for the Blast Furnace Facility is 110.9 lbs/hr, which as compared to IDEM's estimate of 139.3 lbs/hr. The difference between the two inventories is due, in part, to ENSR's incorporation of anticipated changes to the #13 blast furnace and USS' proposed commitment to limit maximum daily hot metal production from the current limit of 27,000 tons per day (tpd) to 22,000 tpd and restricting the use of the #7 blast furnace to those periods when the #13 unit is not operating. Maximum annual emissions are based on a maximum annual hot metal production rate of 6,643,000 tpy.

2.5 BOP Shop

Four sources categories contribute to the PM_{10} emissions from the BOP shop: steel production vessel scrubber stacks, the flux handling system, the ladle preheaters, and the BOP shop roof monitor (see Table 2-4). The total PM_{10} emission rate for the BOP shop calculated by ENSR is 79.2 lbs/hr, versus IDEM's original estimate of 223.4 lbs/hr. The major difference between the two estimates is due to ENSR's use of a more refined method to calculate roof monitor which accurately reflects actual conditions within the BOP shop. In addition, USS' is proposing to commit to a maximum daily total steel production limit of 24,000 tpd. This will be accomplished by placing maximum daily production limits on the BOP and Q-BOP shops as follows:

1) maximum production of 13,250 tpd at the Q-BOP shop will occur only with maximum production of 10,750 tpd at the BOP shop, or
2) maximum production of 12,960 tpd at the BOP shop will occur only with maximum production of 11,040 tpd at the Q-BOP shop.

The emission rates in Table 2-3 reflect both the maximum BOP shop and maximum Q-BOP shop production scenarios. Note that both production scenarios (maximum Q-BOP shop and maximum BOP shop production) were included in the compliance model analysis with the maximum Q-BOP shop production scenario resulting in maximum predicted impacts. In addition to the daily limits, USS is proposing a maximum annual combined steel production limit at the BOP and Q-BOP shops of 7,500,000 tpy.

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TABLE 2-3

BLAST FURNACE PM_{10} EMISSION RATES

Source Number	Source Name	PM_{10} Emission Rate		
		ENSR (lb/hr)[1]	ENSR (tons/yr)[2]	IDEM (lb/hr)[3]
94020	Blast Furnace Stoves #13	21.2	79.9	32.9
94021	Blast Furnace Stoves #4	11.6	46.2	9.7
94022	Blast Furnace Stoves #6	13.6	49.0	9.6
94023	Blast Furnace Stoves #7/#8	2.4[4]	0.0	19.4
94041	Iron Desulfurization Baghouse	9.4	41.2	12.7
94055	#13 Blast Furnace Sinter Screening Baghouse	2.5	10.9	0.0[4]
94116-94118	#4 Blast Furnace Casthouse Fugitives	6.7	26.7	6.8
94119-94121	#6 Blast Furnace Casthouse Fugitives	6.2	24.6	5.8
94122-94124	#7 Blast Furnace Casthouse Fugitives	0.0	0.0	5.6
94125-94127	#8 Blast Furnace Casthouse Fugitives	5.5	0.0	5.5
94128-94129	#13 Blast Furnace Casthouse Fugitives	31.2	117.0	31.3

(1) An explanantion of the calculation of these emission rates can be found in Appendix B.

(2) Based on maximum annual production of 6.6×10^{-6} tPY of hot metal and the following daily average production rates:

#4 BF	4,800 TPD
#6 BF	4,400 TPD
#8 BF	0 TPD
#13 BF	9,000 TPD

(3) Emission rates used in the IDEM modeling of July 1991.

(4) Source was omitted from the IDEM modeling of July 1991.

(5) ENSR short-term emission rate assumes that the #7 Blast Frunace will not operate in conjunction with the #13 Blast Furnace.

TABLE 2-4

BOP AND Q-BOP SHOP PM_{10} EMISSION RATES

Source Number	Source Name	PM_{10} Emission Rate		
		ENSR (lb/hr)[1]	ENSR (tons/yr)[2]	IDEM (lb/hr)[3]
94042	#2 Q-BOP Hot Metal Desulfurization Baghouse	11.5	50.4	0.3
94043	Lime Baghouse	2.6	11.4	2.6
94045	#1 BOP Gas Cleaning	34.4	121.9	34.3
94046	#2 Q-BOP Gas Cleaning	32.0	112.5	55.5
94052	New #2 Q-BOP Secondary Baghouse	25.9	113.4	0.0
94054	LMF Baghouses	2.8	12.5	0.0
94113/94114	#1 BOP Fugitives (maximized Q-BOP Production)[5]	44.8	177.5	189.1
94113/94114	#1 BOP Fugitives (maximized BOP Production)[5]	54.0	177.5	189.1
94115	#2 Q-BOP Fugitives Uncontrolled (maximized Q-BOP Production)[5]	92.5	323.4	320.9
94115	#2 Q-BOP Fugitives Uncontrolled (maximized BOP Production)[5]	77.1	323.4	320.9
94115	#2 Q-BOP Fugitives Controlled (maximized BOP Production)[5]	22.6	99.0	320.9

(1) An explanation of the calculation of these emission rates can be found in Appendix B.
(2) Based on maximum annual steel production limit of 75. x 10^{-6} TPY. Emission rates base on daily annual production rates of 10,570 tons per day at the Q-BOP and 9,715 tons per day at the BOP.
(3) Emission rates used in the IDEM modeling of July 1991.
(4) Source was omitted from the IDEM modeling of July 1991.
(5) The maximized Q-BOP production scenario allows for daily maximum production of 13,250 tons per day at the Q-BOP and 10,750 tons per day at the BOP. The maximized BOP scenario allows for daily maximum production of 11,040 tons per day at the Q-BOP and 12,960 tons per day at the BOP.

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2.6 Q-BOP Shop

Sources of PM_{10} emissions from the Q-BOP shop include the steel production vessel scrubber stacks, the flux handling system, the ladle metallurgy facility, the iron desulfurization unit, and the Q-BOP Shop roof monitor (see Table 2-4). The total uncontrolled PM_{10} emission rate for the Q-BOP shop as calculated by ENSR is 141.6 lbs/hr, versus a rate of 379.3 lbs/hr calculated by IDEM. The Scenario 1 controlled Q-BOP shop emission rate is 107.0 lbs/hr. The differences between the two inventories is most notably attributable to USS' proposal to install a 900,000 cfm enclosed hood evacuation system to capture and control charging, tapping, and primary fugitive emissions which contribute to total roof monitor emissions. USS' proposed plan to coordinate production limits for the BOP and Q-BOP, discussed in Section 2.5, also contribute to the differences between the two inventories. Other differences between the two sets of emission calculations are ENSR's use of a more refined method to estimate roof monitor emissions which more accurately reflect actual conditions within Q-BOP shop and IDEM's underestimation of the emission rate for the steel producing vessel scrubber stacks.

2.7 Boilers

Table 2-5lists the PM_{10} emission rates for Gary Works boilers. Boilers included in the PM_{10} inventory were the #4 Boiler House, the Turboblower Boilers, the Tin Mill Boilers, the #2 Coke Plant Boiler House, the 160/210 Inch Plate Mill Boilers, and the 84 Inch Hot Strip Boilers. Turboblower Boiler #6, which was omitted from the IDEM July 1991 model inventory, was included in the ENSR inventory. ENSR's total PM_{10} emission rate for the Gary Works boilers is 131.1 lbs/hr (control Scenario 1), versus IDEM's total boiler emission rate of 224.5 lbs/hr. The difference between the two totals is due to IDEM's failure to include control efficiencies for some of the boilers in the emission rate calculations.

2.8 Area Sources

Estimates of fugitive PM_{10} emissions calculated by IDEM were based on a report of fugitive emissions issued by USS Gary Works (Morris 1987). This report detailed specific fugitive emission estimates and was based on information collected during the 1986 operating year. Information used in the modeling of area sources at the Gary Works was used in the form it was received from IDEM; no modifications or updates were made by ENSR.

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TABLE 2-5

BOILER PM_{10} EMISSION RATES

Source Number	Source Name	PM_{10} Emission Rate		
		ENSR (lb/hr)[1]	ENSR (tons/yr)[2]	IDEM (lb/hr)[3]
94012	#4 Boiler House	39.4[4]	172.6	39.4
94014	160"/210" Plate Mill Continuous Furnace	4.5	19.7	4.5
94017	84" Hot Strip Mill Boilers	11.2	49.1	61.9
94018	84" Hot Strip Mill Waste Heat Boiler #1	2.1	9.2	2.1
94019	84" Hot Strip Mill Waste Heat Boiler #2	2.1	9.2	2.1
94037	#2 Coke Plant Boilers #4/#5	10.0	43.8	67.2
94038	#2 Coke Plant Boiler #6	3.0	13.1	3.0
94040	#2 Coke Plant Boiler #8	0.7	3.1	2.8
94050	Turboblower Boiler #6	16.6	72.7	0.0[5]
94051	Turboblower Boilers #1-5	42.0[4]	184.0	41.5

(1) An explanantion of the calculation of these emission rtaes can be found in Appendix B.
(2) Based 8,760 hours of operation at maximum load.
(3) Emission rates used in the IDEM modeling of July 1991.
(4) Control Strategy 2 assumes natural gas in these sources.
(5) Source was omitted from the IDEM modeling of July 1991.

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2.9 Additional Sources Not Modeled BY IDEM

Additional sources not modeled by IDEM or included in the draft PM_{10} SIP rule include:

- Turboblower Boiler #6,
- Sinter Plant S1/S2 baghouse,
- Sinter Plant S1/S2 fugitives,
- Q-BOP shop hot metal desulfurization baghouses,
- Slab Torch Cut Machine,
- Slab Mill Keep Hot Furnace,
- Plate Mill Slow Cool Furnace,
- Beach Iron fugitives, and
- Q-BOP shop evacuation system secondary baghouse.

Emission rates for these sources are given in Table 2-6. The Turboblower Boiler #6 and the Sinter Plant S1/S2 baghouse and fugitives are existing sources omitted from the IDEM inventory. The Q-BOP shop hot metal desulfurization baghouses are new baghouses for control of fugitive emissions associated with hot metal desulfurization at the Q-BOP shop. The Slab Torch Cut Machine, Slab Mill Keep Hot Furnace, and the Plate Mill Slow Cool Furnace, are recently permitted sources omitted from the IDEM inventory. Beach iron is a source of fugitive emissions identified by IDEM. ENSR has developed an emission rate for this source and has included Beach Iron in the dispersion model analysis. As shown in Section 4, maximum impacts from Beach Iron are insignificant at those receptors which currently are predicted to exceed the NAAQS.

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TABLE 2-6

PM_{10} EMISSION RATES FOR ADDITIONAL SOURCES

Source Number	Source Name	PM_{10} Emission Rate		
		ENSR (lb/hr)[1]	ENSR (tons/yr)[2]	IDEM (lb/hr)[3]
94131	Torch Cut-off Machine	1.7	7.4	0.0
94132	Slab Mill Keep Hot Furnace	0.2	0.9	0.0
94133	Plate Mill Slow Cool Furnace	0.2	0.9	0.0
94155-56	Beach Iron (Fugitives)	9.7	7.1	0.0

(1) An explanation of the calculation of these emission rates can be found in Appendix B.
(2) Based on 8,760 hours of operation.
(3) All sources were emitted from the IDEM modeling of July 1991.

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